

FIG.1

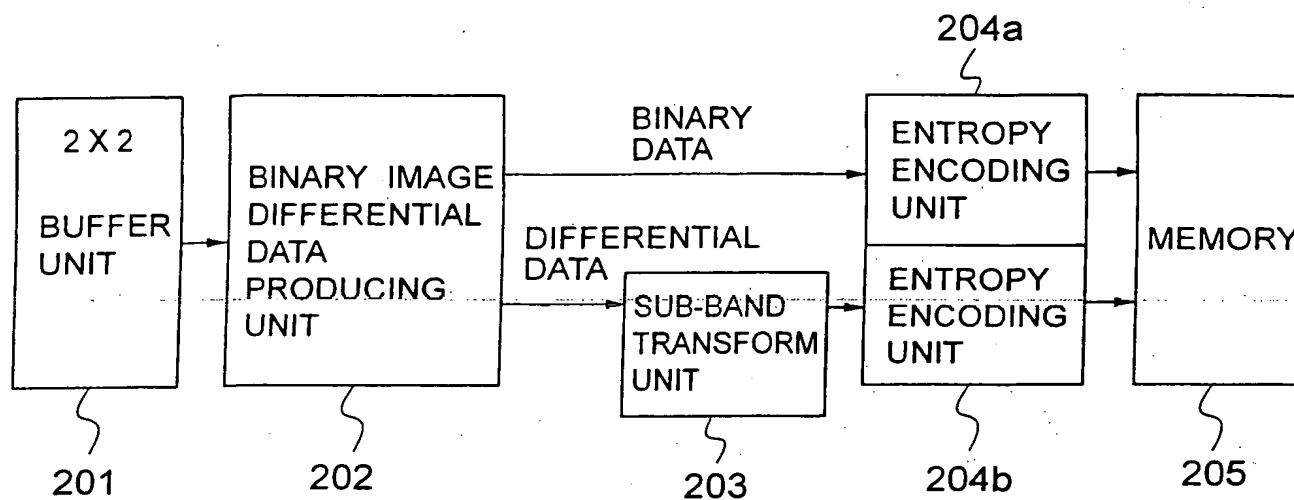


FIG.2

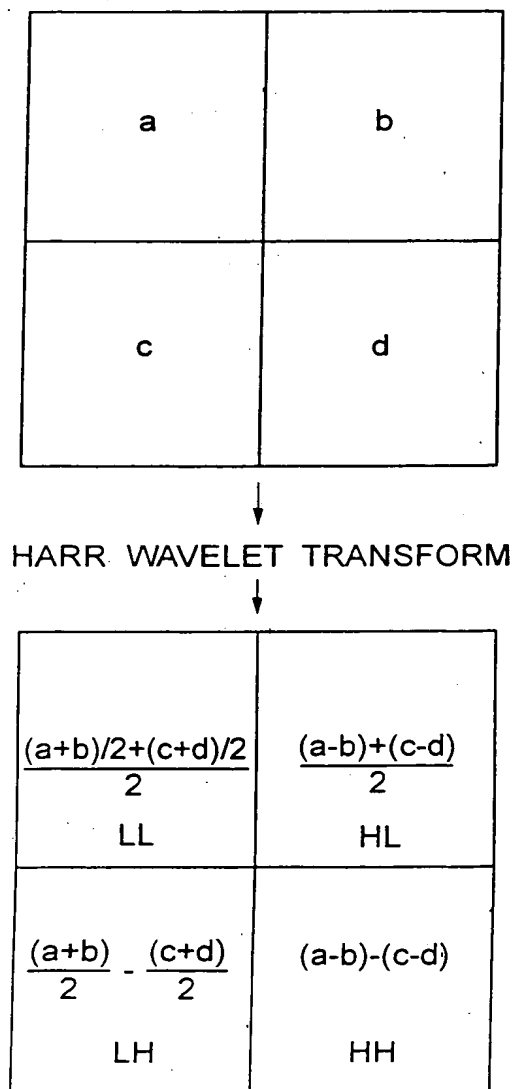


FIG. 3

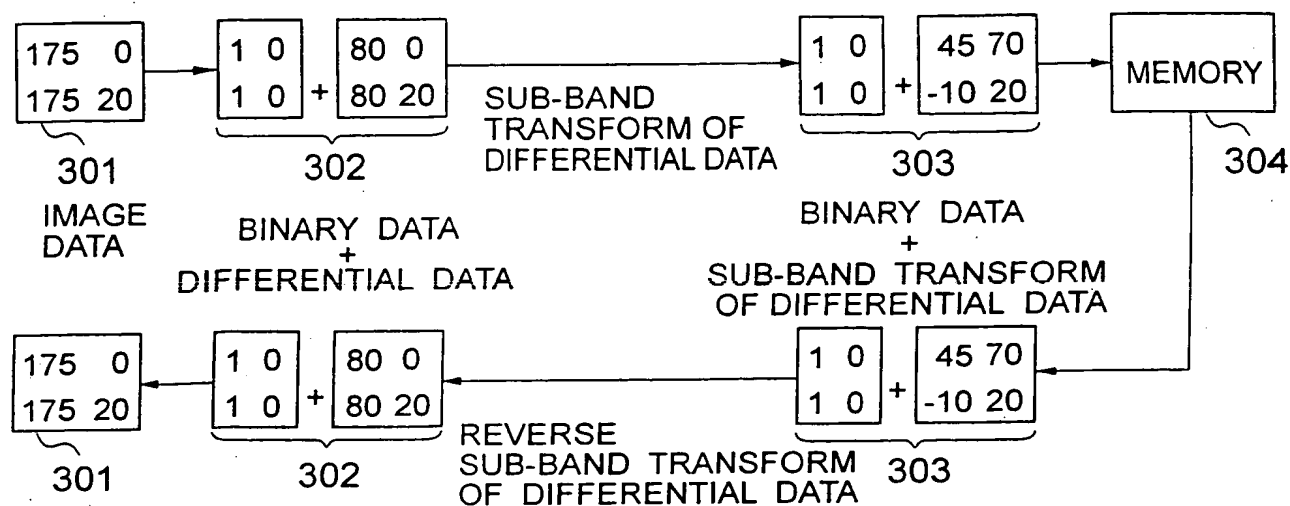


FIG. 4 A

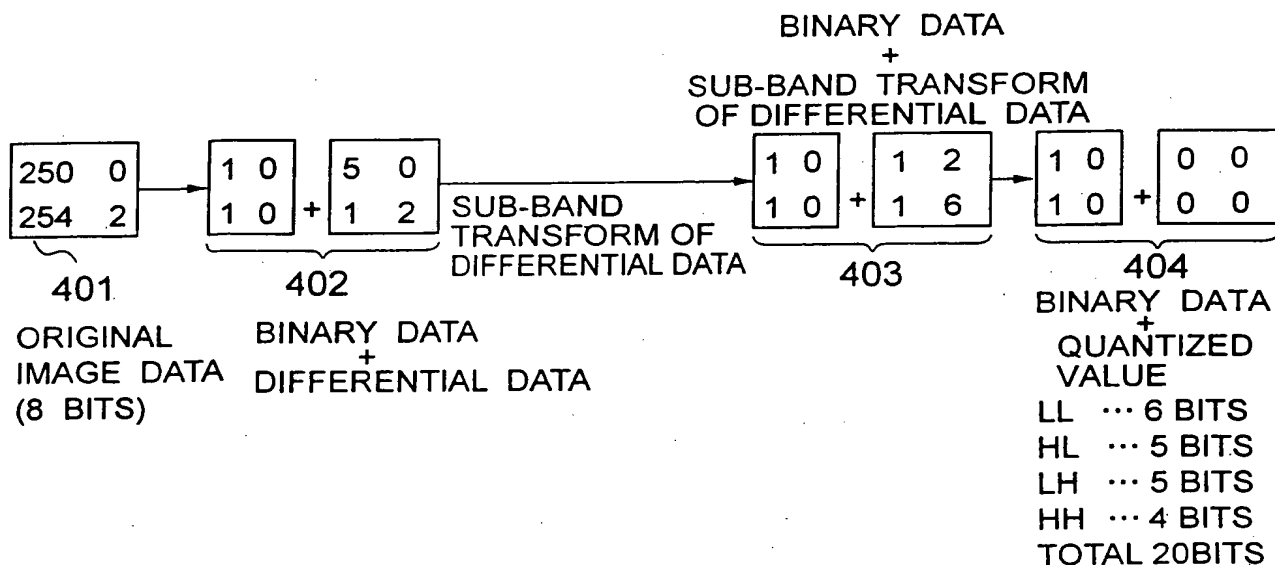


FIG. 4B

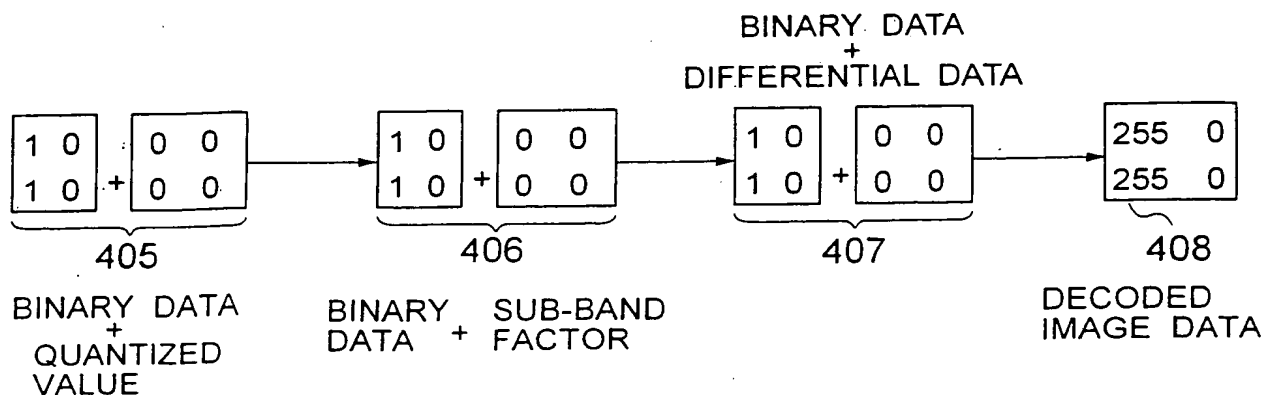


FIG.5

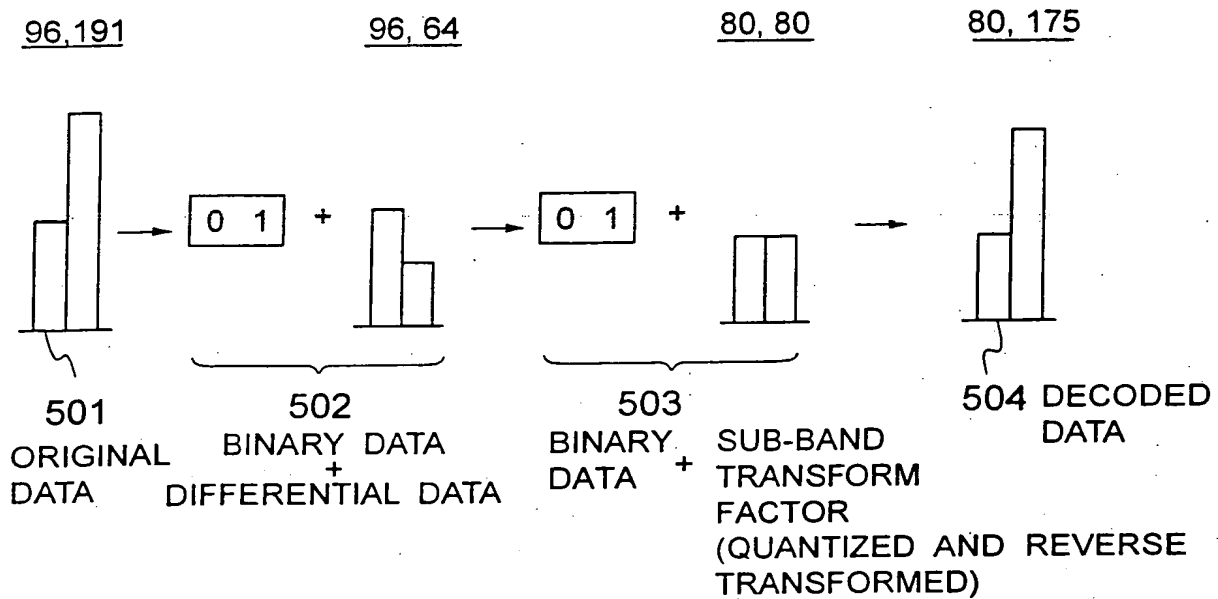


FIG.6

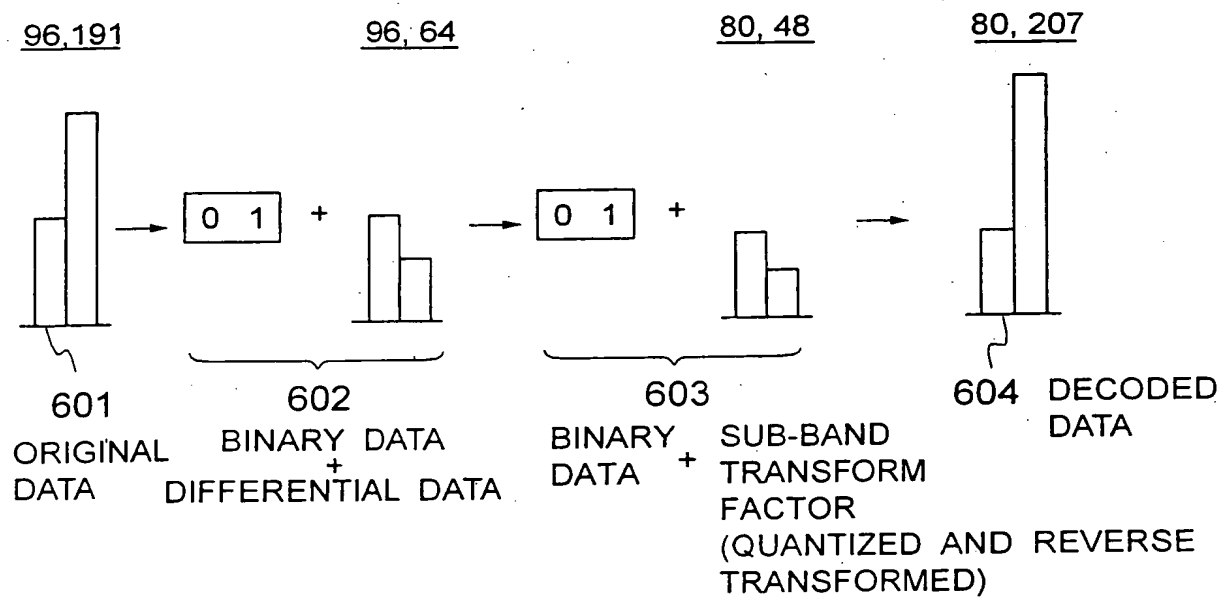


FIG.7

HL	LH	HH	CODE
0	0	0	0
32	0	0	1
-32	0	0	2
0	32	0	3
0	-32	0	4
64	0	0	5
-64	0	0	6
0	64	0	7
0	-64	0	8
128	0	0	9
-128	0	0	10
0	128	0	11
0	-128	0	12
32	32	0	13
-32	-32	0	14
			15 (NOT USED)

FIG.8

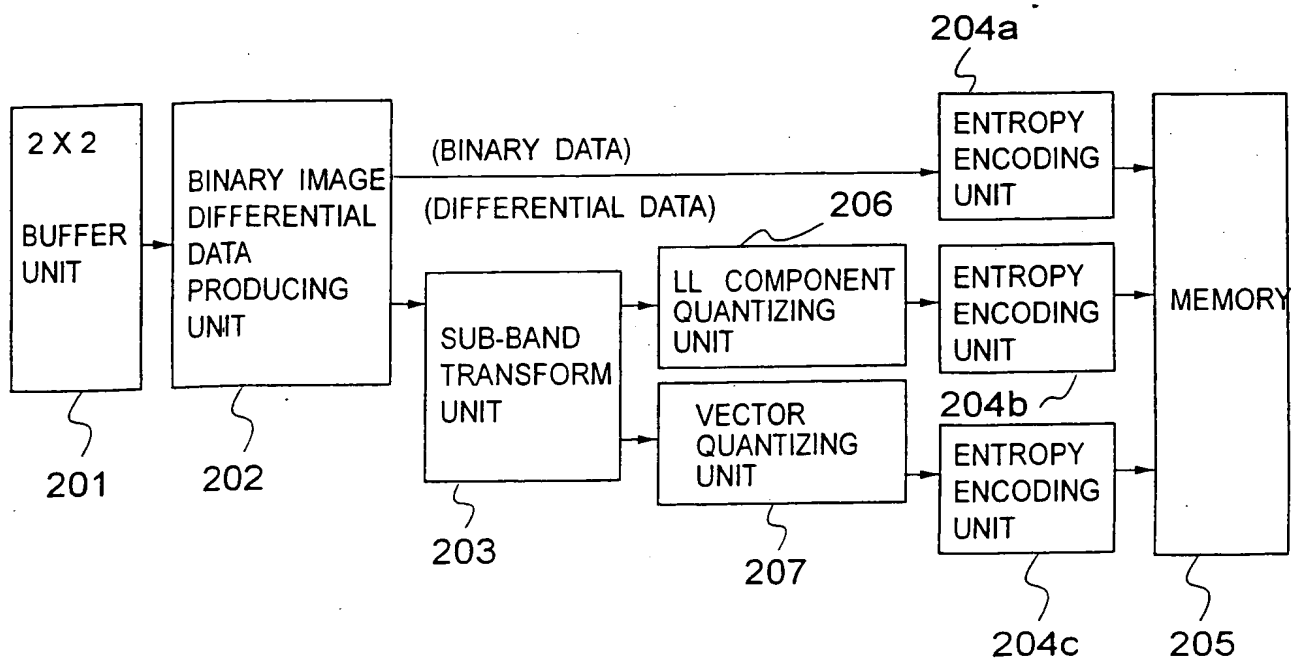


FIG.9

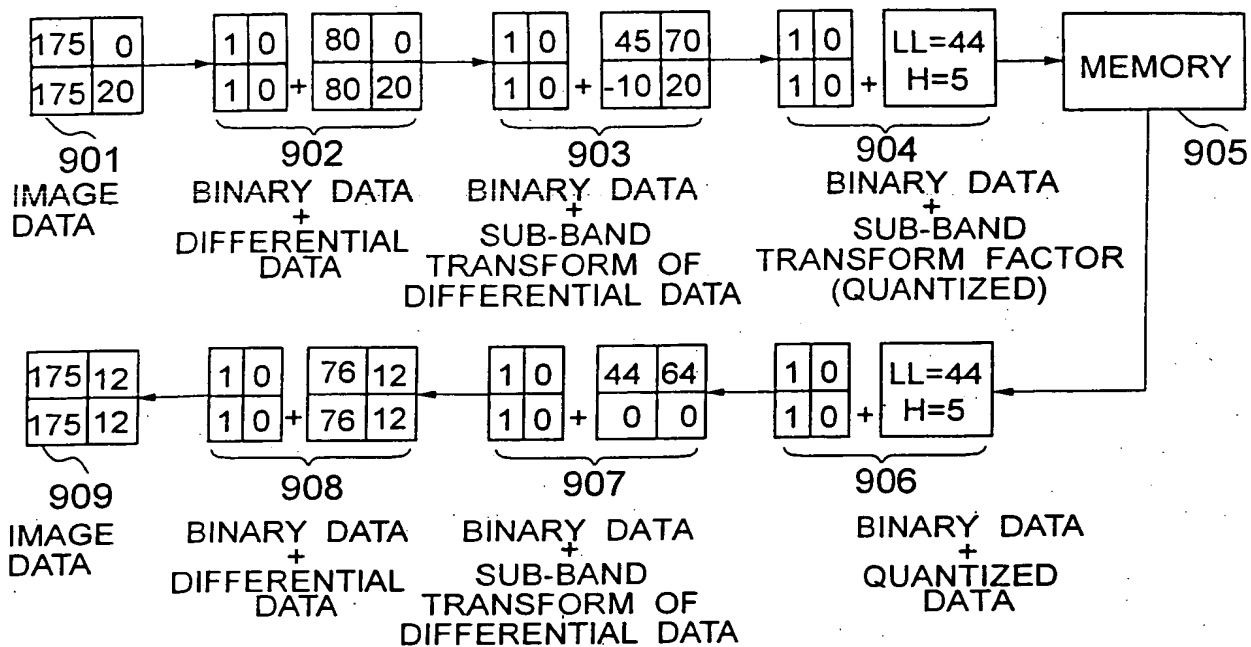


FIG.10

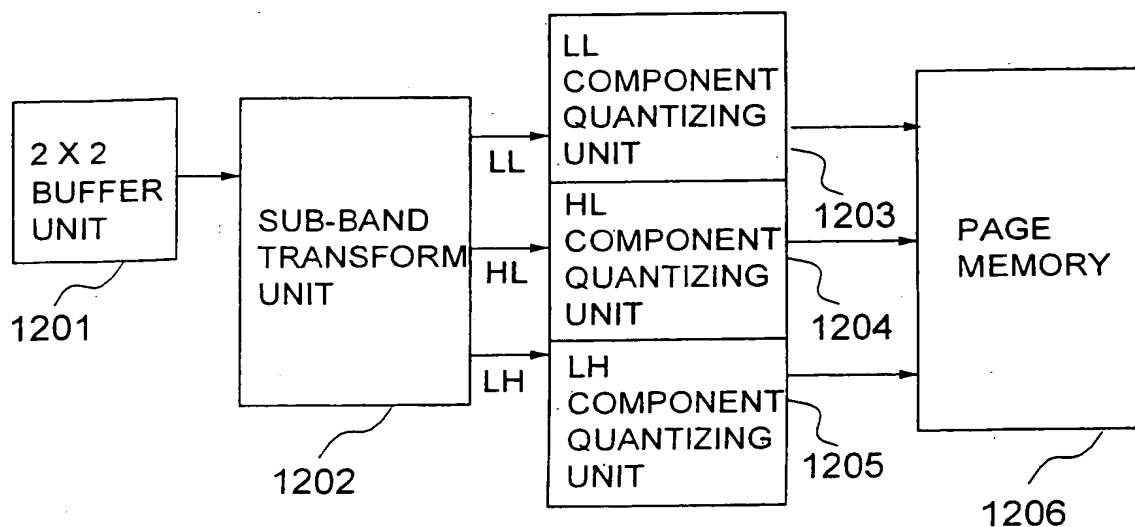


FIG.11

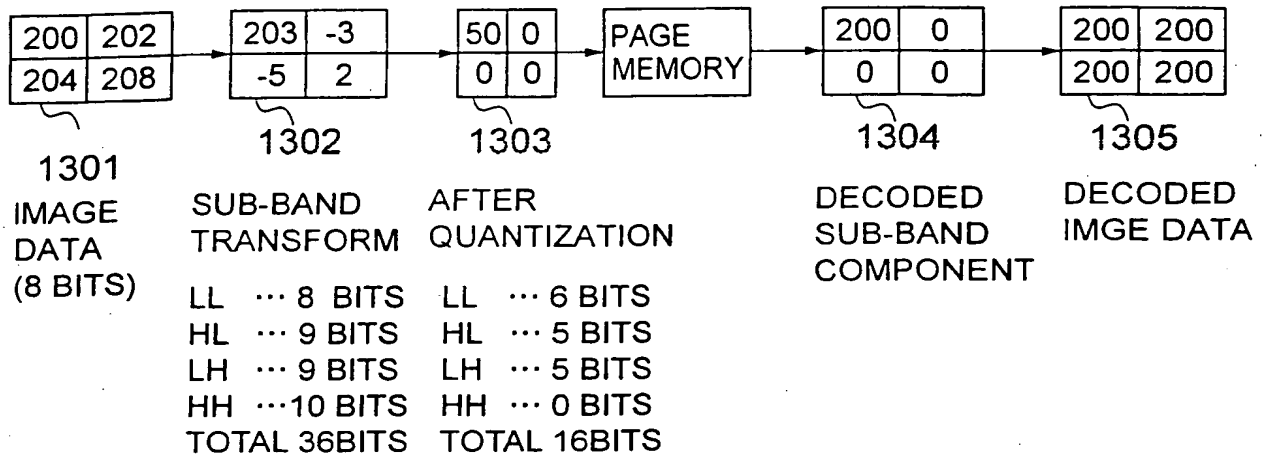


FIG.12

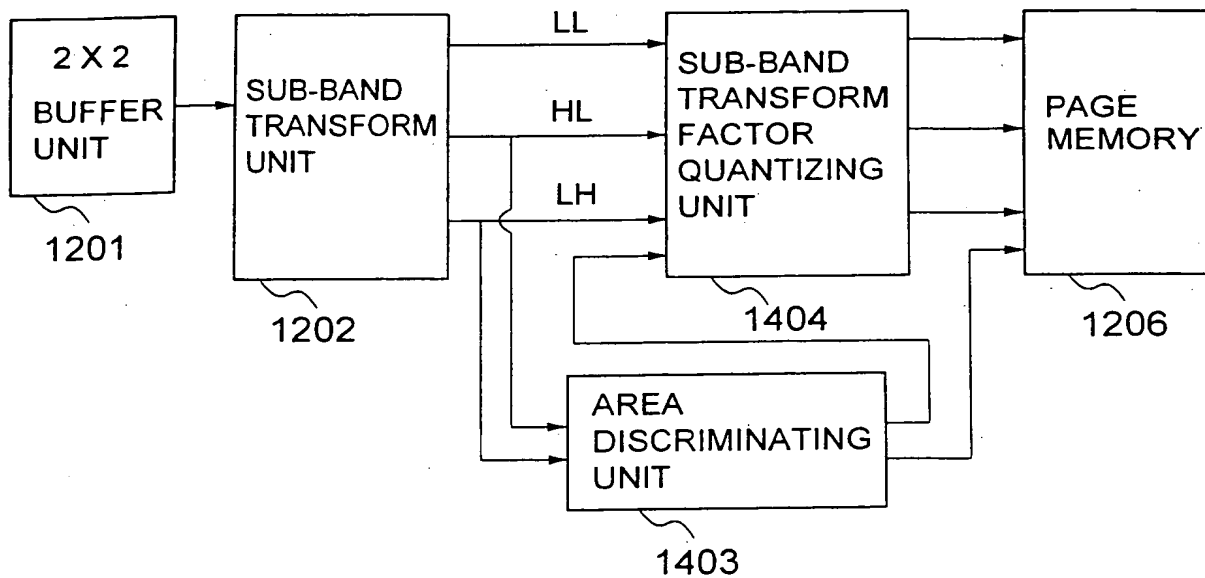


FIG.13

AREA	EDGE	NON-EDGE
DETERMINING METHOD	$ HL \geq 64$ OR $ LH \geq 64$	OTHER THAN EDGE AREA
FLAG(1 BIT)	1	0
QUANTIZING METHOD	LL...DIVIDE BY 4 (6 BITS) HL,LH...DIVIDE BY 64 (3 BITS) HH... 0 (0 BIT) (TOTAL 13 BITS)	LL...DIVIDE BY 4 (6 BITS) HL,LH...DIVIDE BY 16 (3 BITS) HH... 0 (0 BIT) (TOTAL 13 BITS)

FIG.14A

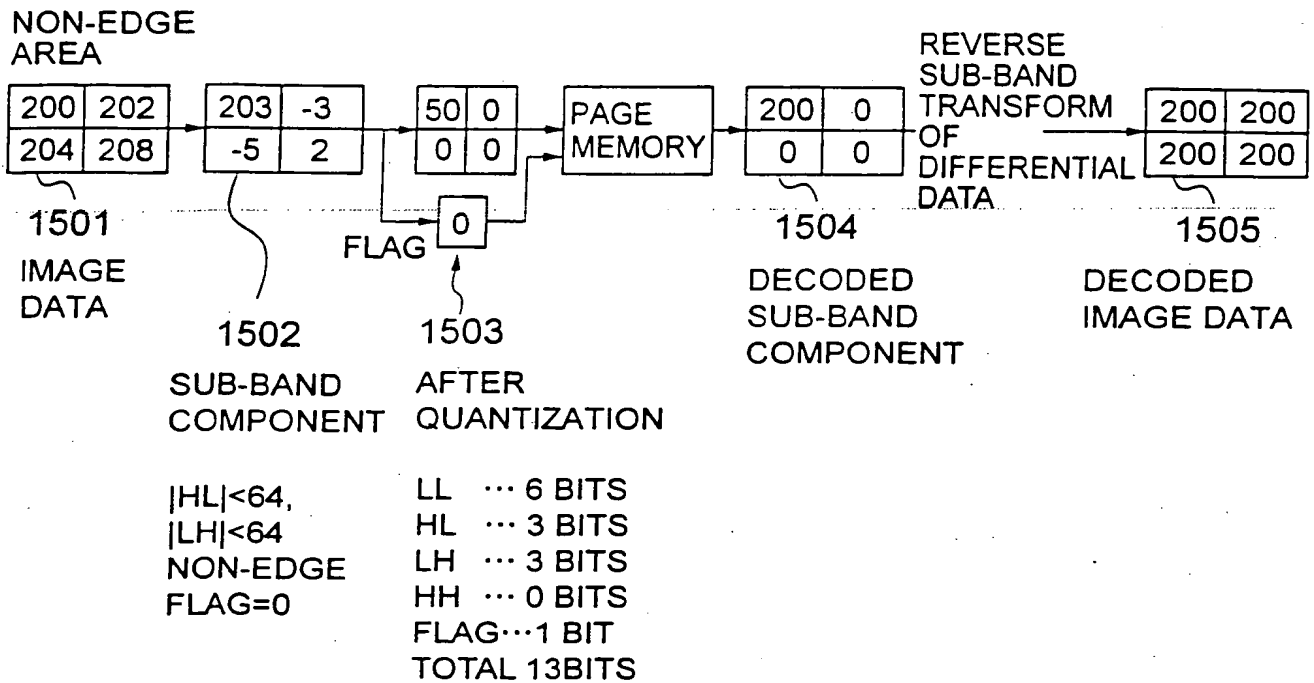


FIG.14B

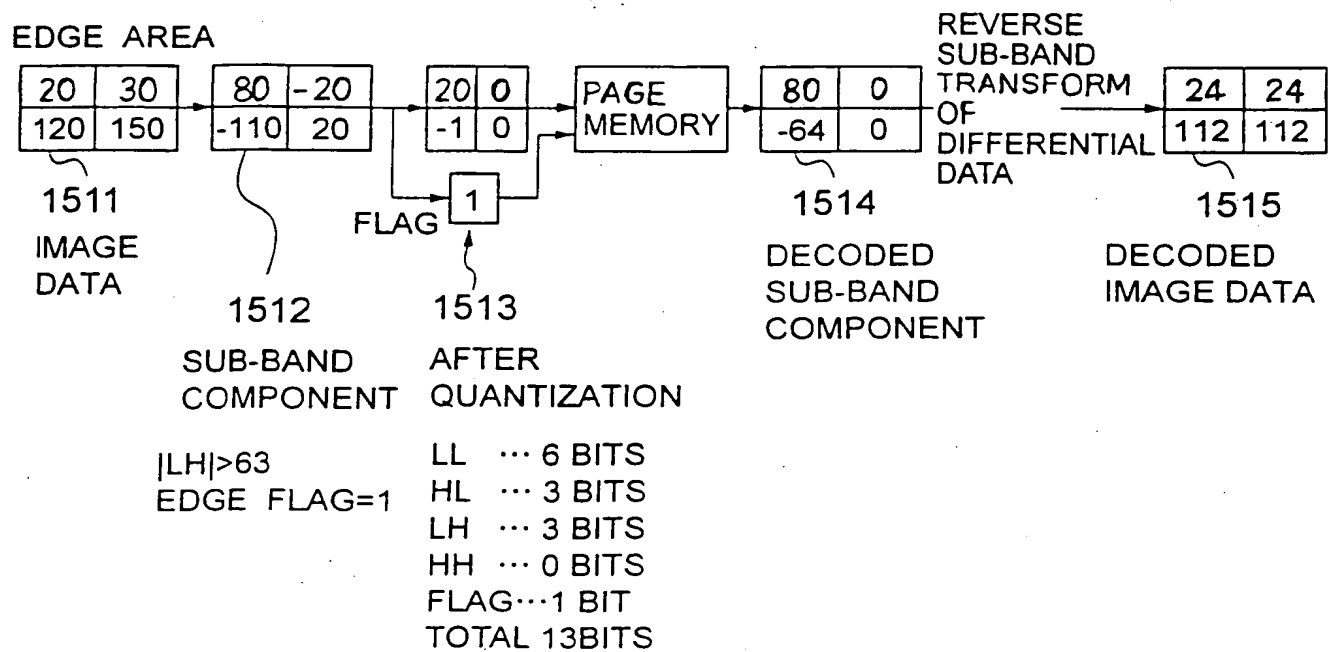


FIG.15

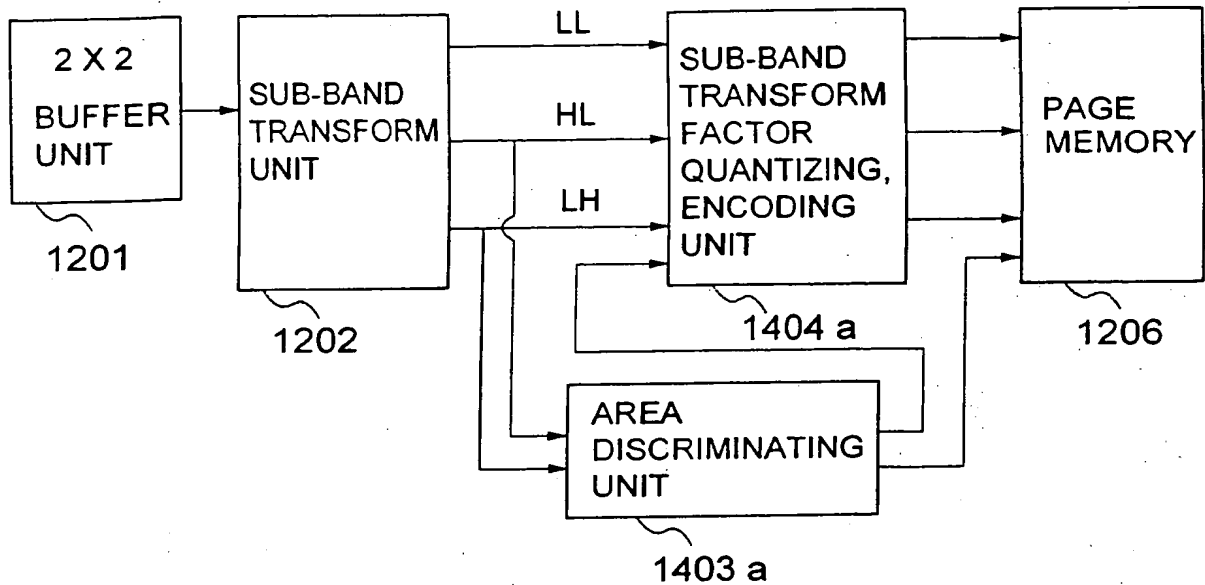


FIG.16

AREA	EDGE	NON-EDGE
DETERMINING METHOD	$ HL \geq 16$ OR $ LH \geq 16$	OTHER THAN EDGE AREA
FLAG(1 BIT)	1	0
QUANTIZING METHOD	LL...DIVIDE BY 16 (4 BITS) HL,LH...DIVIDE BY 32 (4 BITS) HH... 0 (0 BIT) (TOTAL 13 BITS)	LL...DIVIDE BY 4 (6 BITS) HL,LH...DIVIDE BY 4 (3 BITS) HH... 0 (0 BIT) (TOTAL 13 BITS)

FIG.17A

EDGE AREA

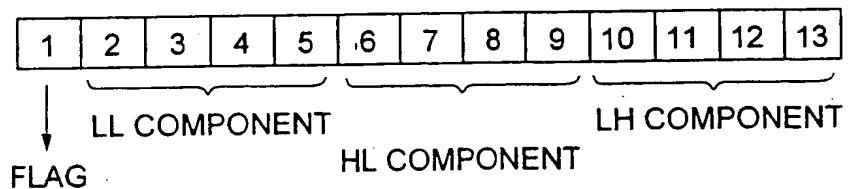


FIG.17B

NON-EDGE AREA

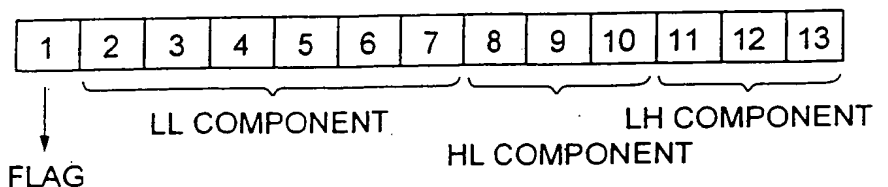


FIG.18A

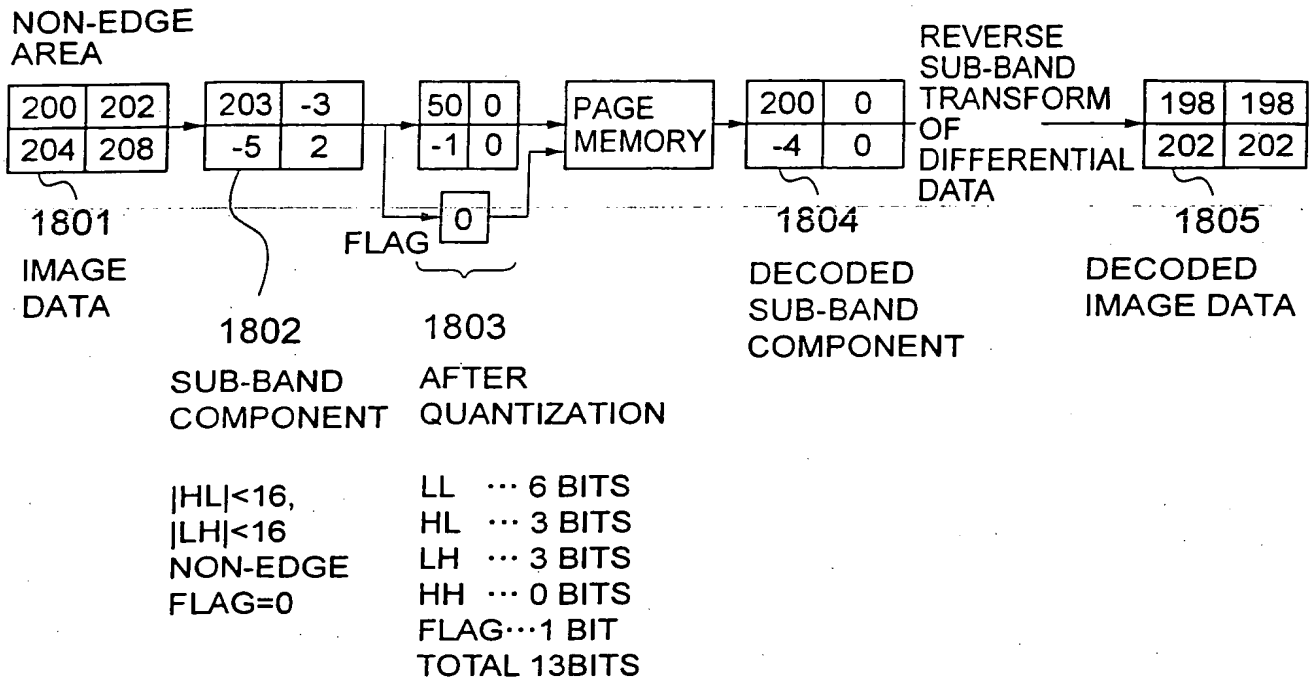


FIG.18B

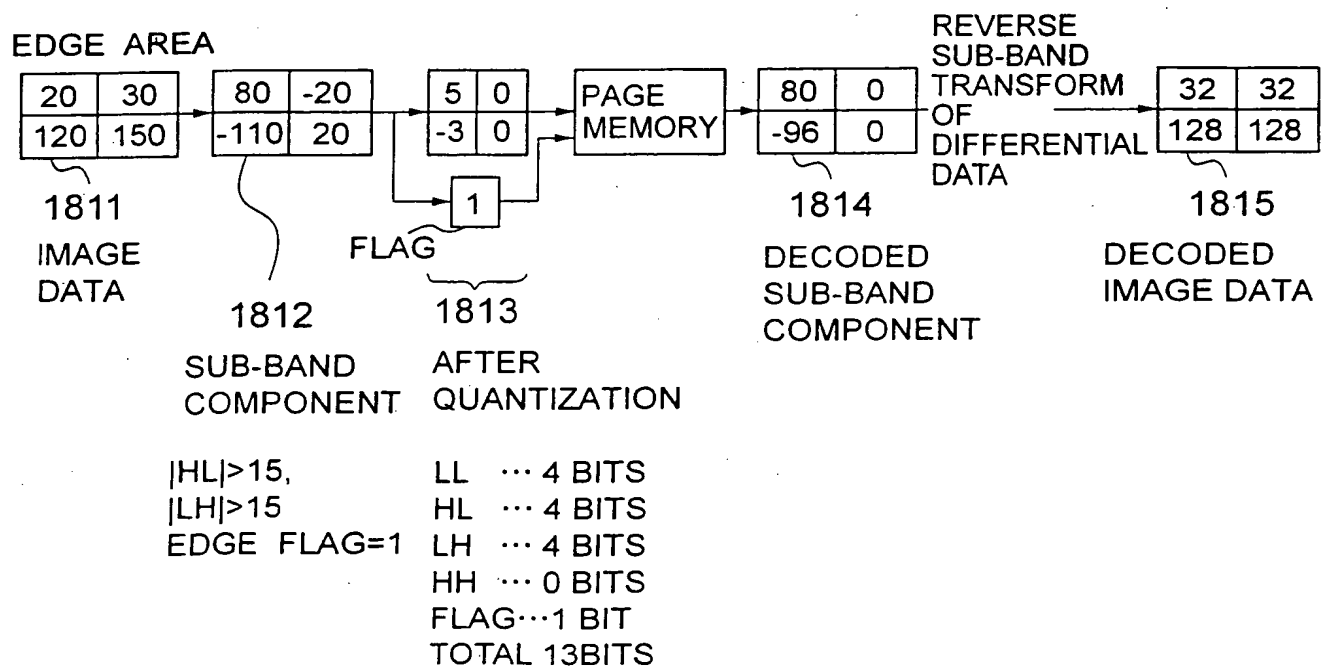


FIG.19

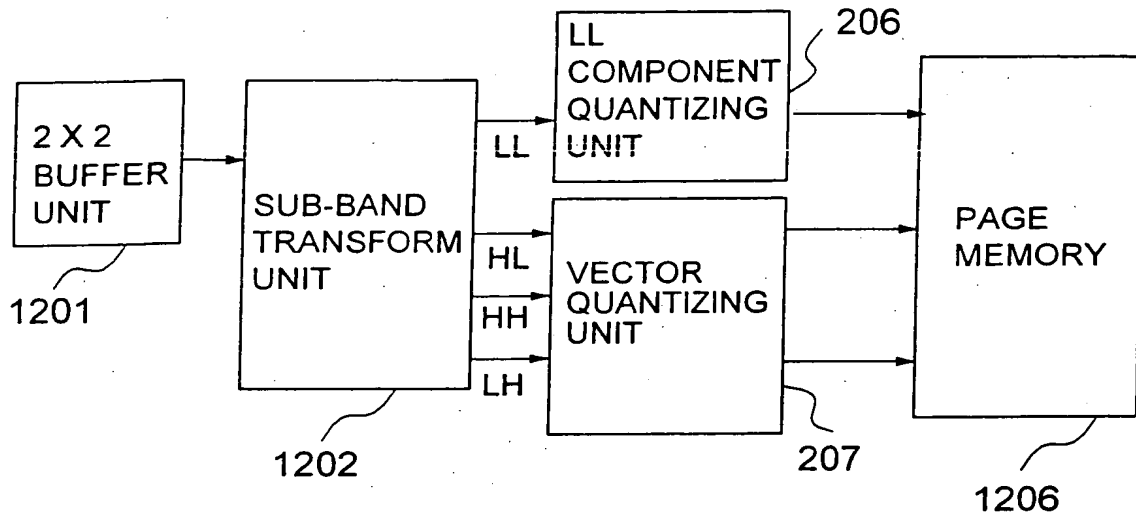


FIG.20

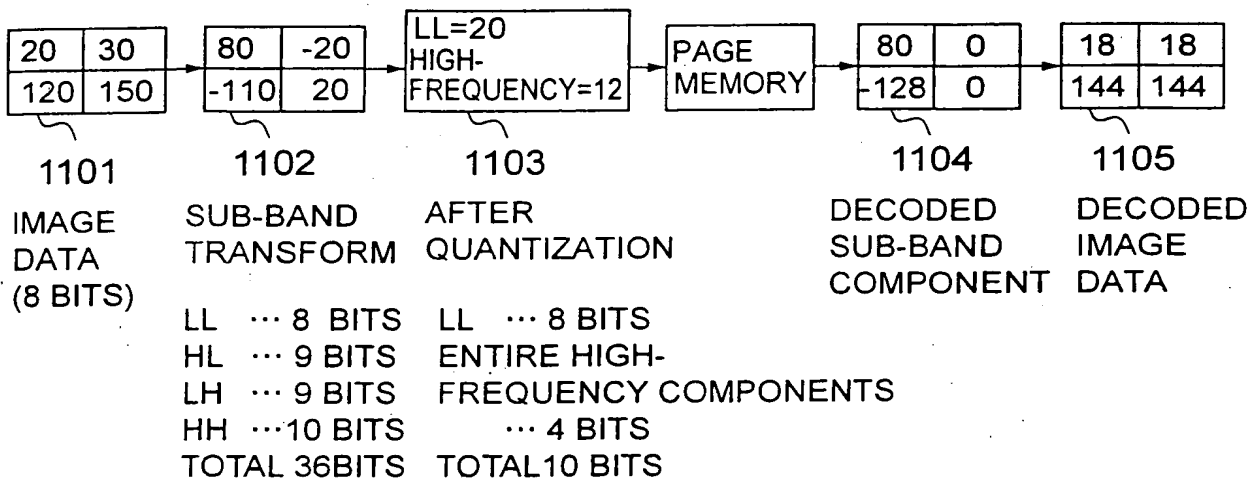
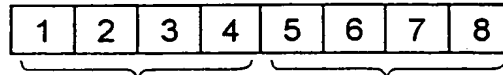


FIG.21

AREA	EDGE	NON-EDGE
DETERMINING METHOD	$ HL \geq 16$ OR $ LH \geq 16$	OTHER THAN EDGE AREA
FLAG	TWO LSBs ARE NOT "00"	TWO LSBs ARE "00"
QUANTIZING METHOD	①LL...DIVIDE BY 16 (4 BITS) ②HIGH-FREQUENCY COMPONENTS...VECTOR QUANTIZATION BY 4 BITS MULTIPLE OF 4 IS NOT USED (TOTAL 8 BITS)	①LL...DIVIDE BY 4 (6 BITS) ②HIGH-FREQUENCY COMPONENTS...ASSIGNED 2 BITS ONLY "00" IS USED FOR HL,LH,HH (TOTAL 8 BITS)

FIG.22A

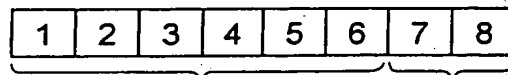
EDGE AREA ($|HL| \geq 16$ OR $|LH| \geq 16$) :



LL COMPONENT HIGH-FREQUENCY
COMPONENTS

FIG.22B

NON-EDGE AREA(OTHER THAN EDGE AREA) :



LL COMPONENT HIGH-FREQUENCY
COMPONENTS=0

FIG.22C

FLAG :TWO LOWER ORDER BITS ARE "00"... NON-EDGE AREA
OTHER THAN NON-EDGE AREA ... EDGE AREA

FIG.22D

CORRESPONDENCE TABLE OF CODES AND VECTOR CODES (HL,LH,HH) :

HIGH-FREQUENCY COMPONENTS CODE	EDGE (16,4 BITS)	NON-EDGE (4,2 BITS)
0	NOT USED	(0, 0, 0)
1	(16, 0, 0)	NOT USED
2	(-16, 0, 0)	NOT USED
3	(0, 16, 0)	NOT USED
4	NOT USED	
5	(0, -16, 0)	
6	(64, 0, 0)	
7	(-64, 0, 0)	
8	NOT USED	
9	(0, 64, 0)	
10	(0, -64, 0)	
11	(128, 0, 0)	
12	NOT USED	
13	(-128, 0, 0)	
14	(0, 128, 0)	
15	(0, -128, 0)	

FIG.23A

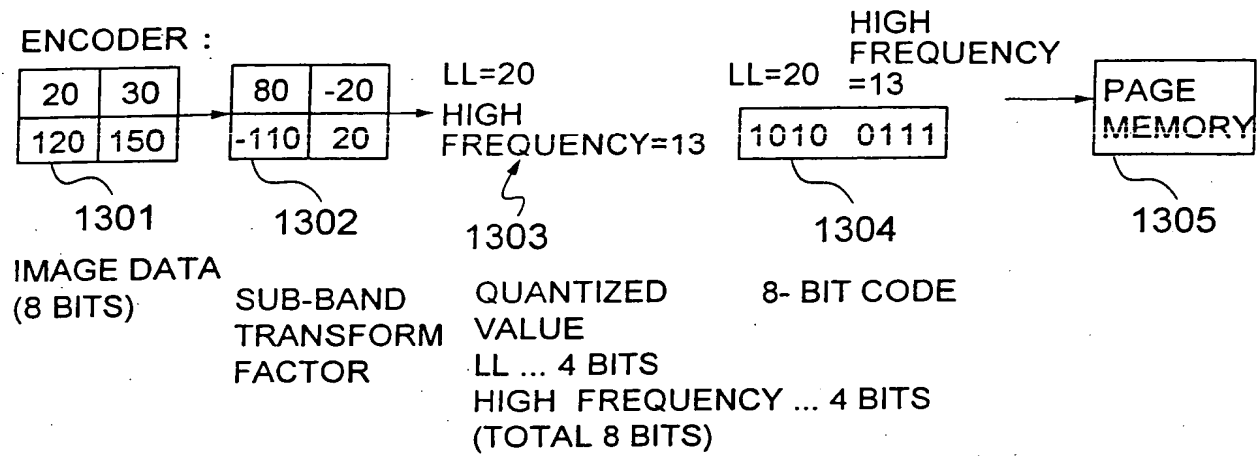


FIG.23B

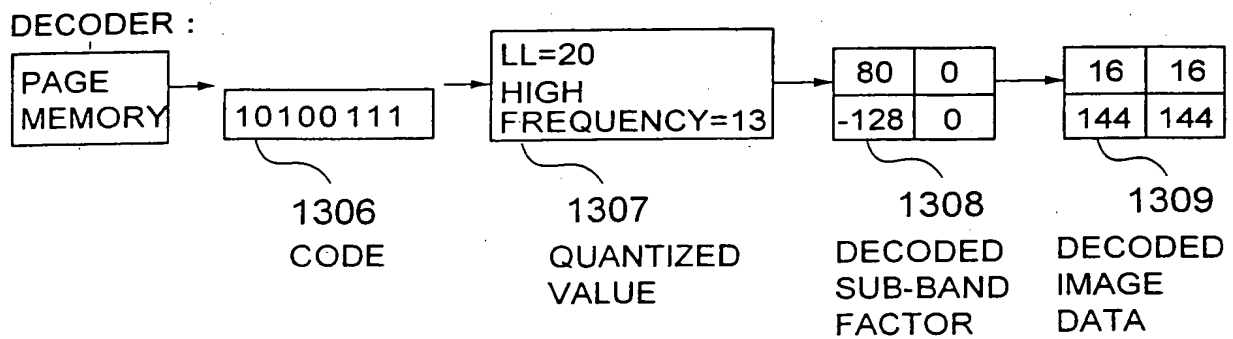
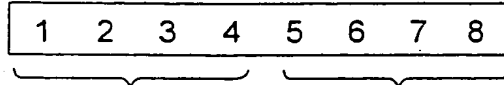


FIG.24A

EDGE AREA :

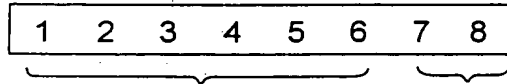


MSB 4 BITS OF
LL COMPONENT

VECTOR QUANTIZED
VALUE OF HIGH-FREQUENCY
COMPONENTS

FIG.24B

NON-EDGE AREA :

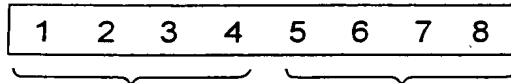


MSB 6 BITS OF
LL COMPONENT

00

FIG.24C

EDGE AREA :

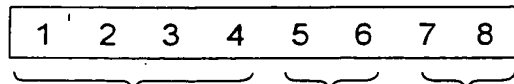


MSB 4 BITS OF
LL COMPONENT

VECTOR QUANTIZED
VALUE OF HIGH-FREQUENCY
COMPONENTS

FIG.24D

NON-EDGE AREA :



MSB 4 BITS OF
LL COMPONENT

00

FIFTH AND SIXTH
BITS FROM MSB OF
LL COMPONENT

FIG.25

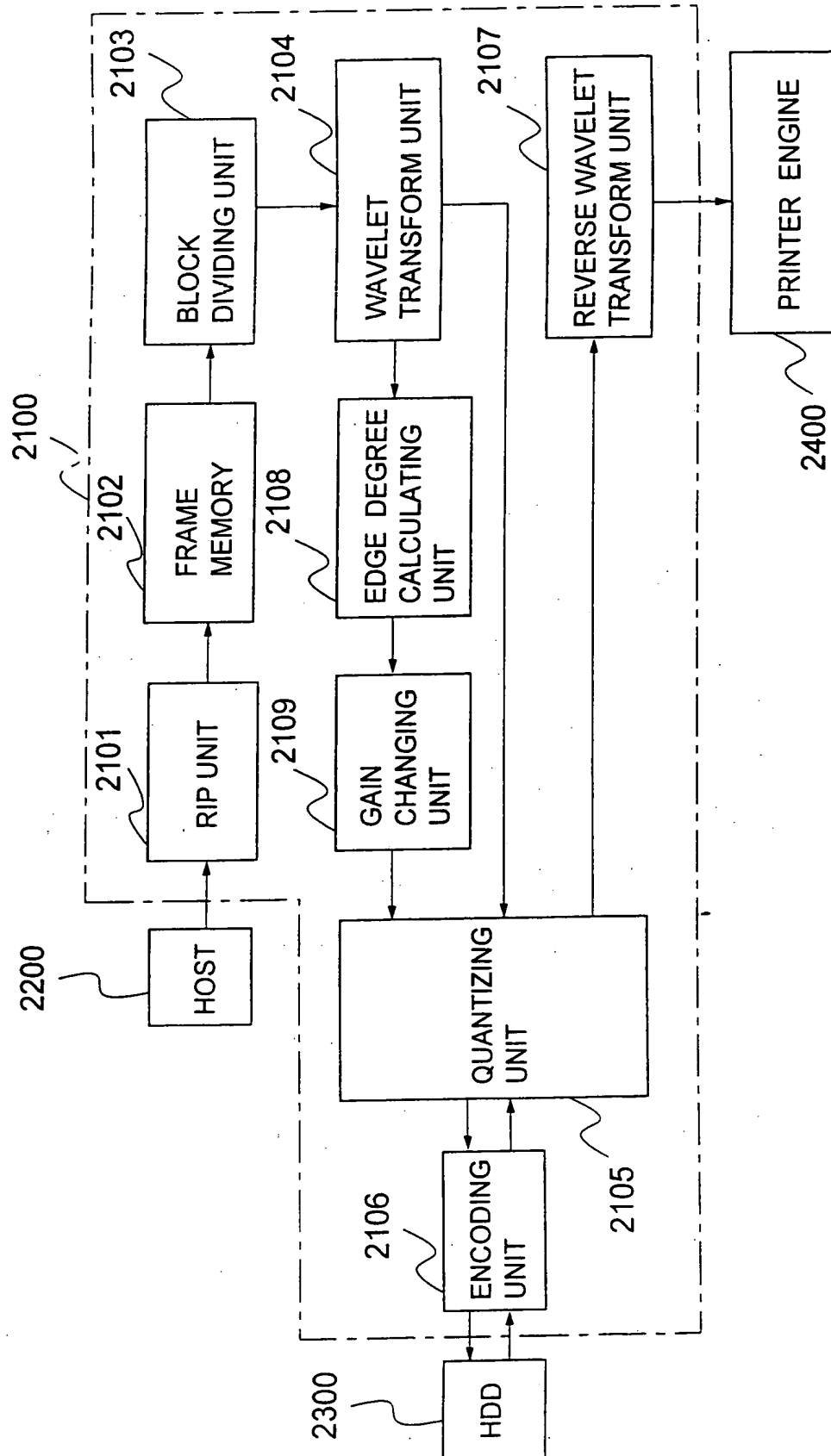


FIG.26

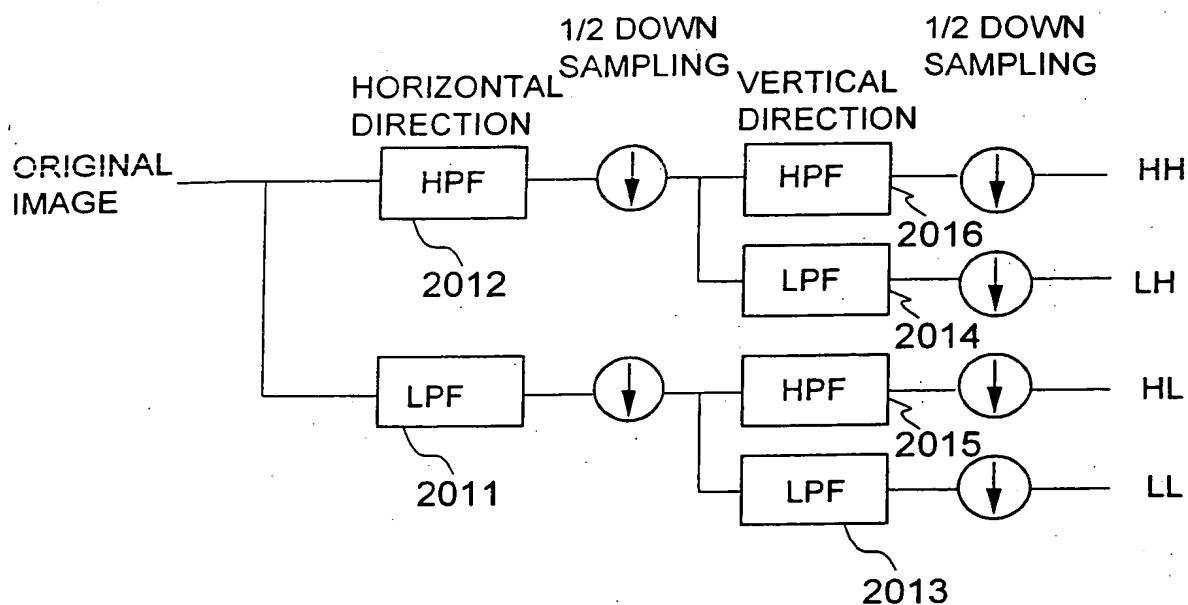


FIG.27

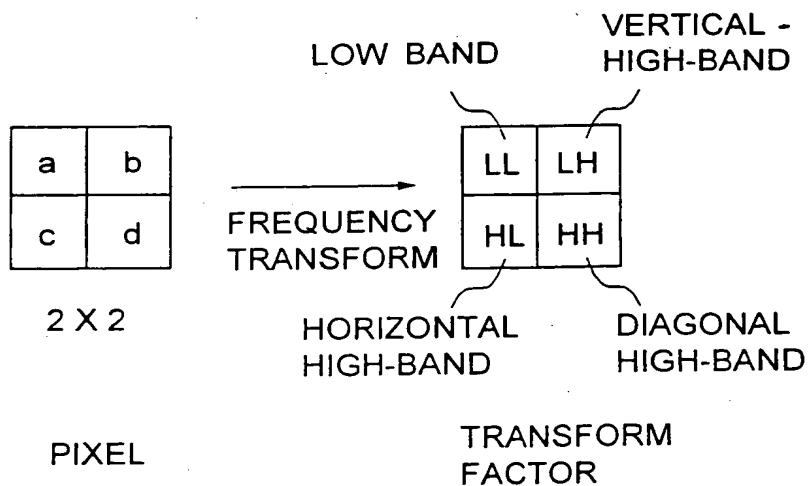


FIG.28

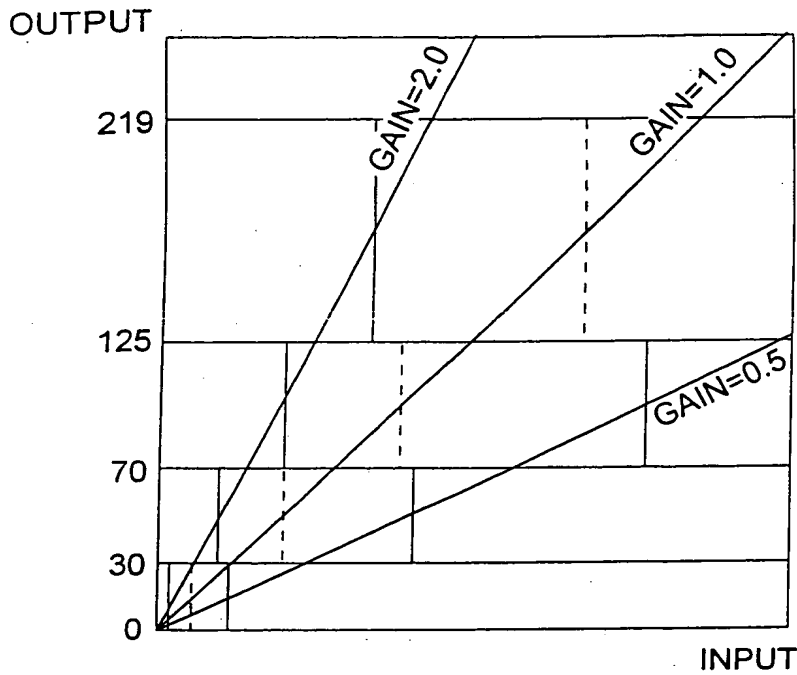


FIG.29A

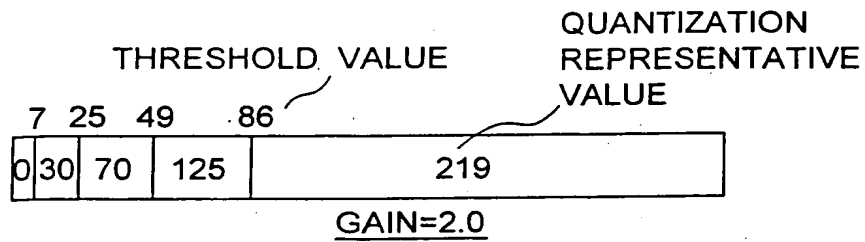


FIG.29B

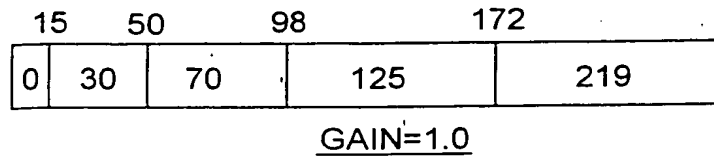
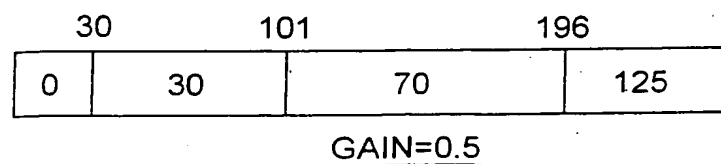
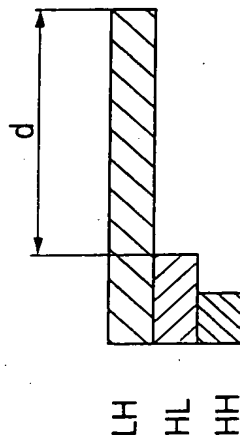


FIG.29C



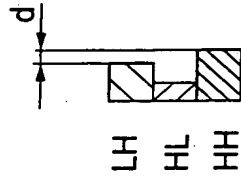
$$\text{THRESHOLD VALUE} = \frac{\text{THRESHOLD VALUE AT GAIN}=1}{\text{GAIN}}$$

FIG.30A



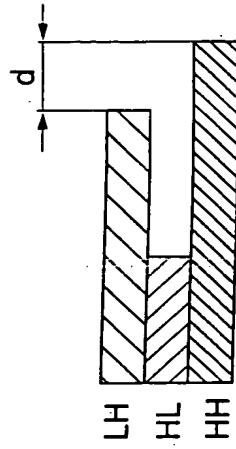
EDGE AREA

FIG.30B



NON-EDGE AREA

FIG.30C



NATURAL EDGE AREA

FIG.31

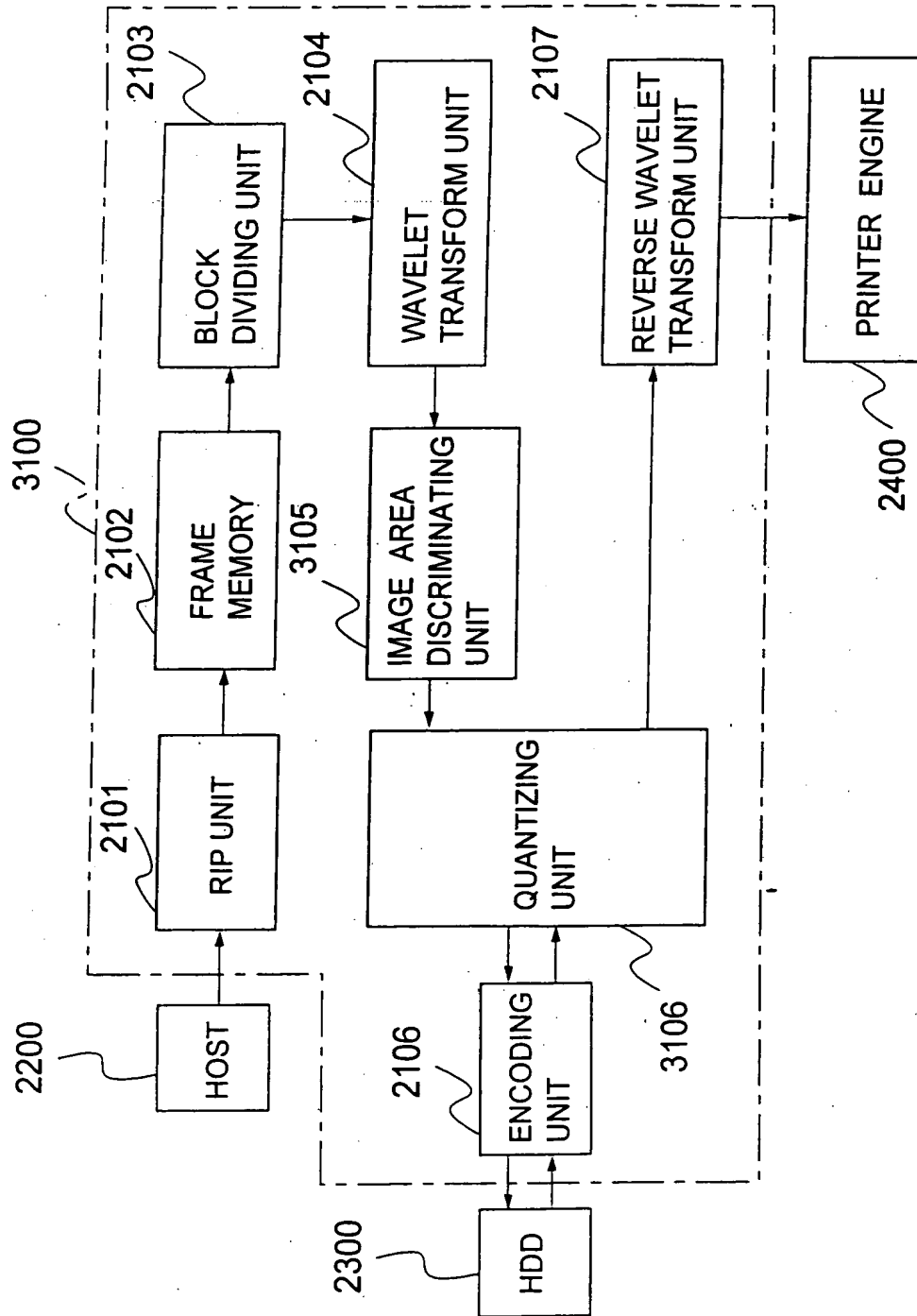
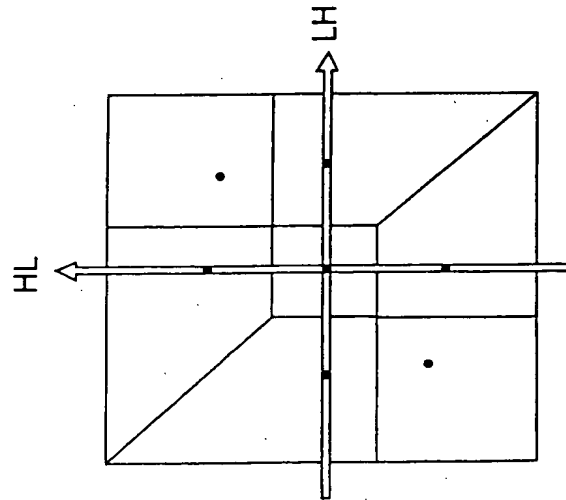
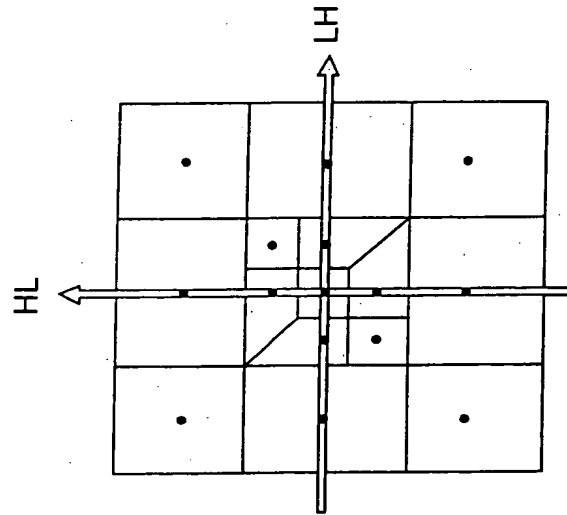


FIG.32A



7-VALUE VECTOR QUANTIZATION

FIG.32B



15-VALUE VECTOR QUANTIZATION

FIG.33

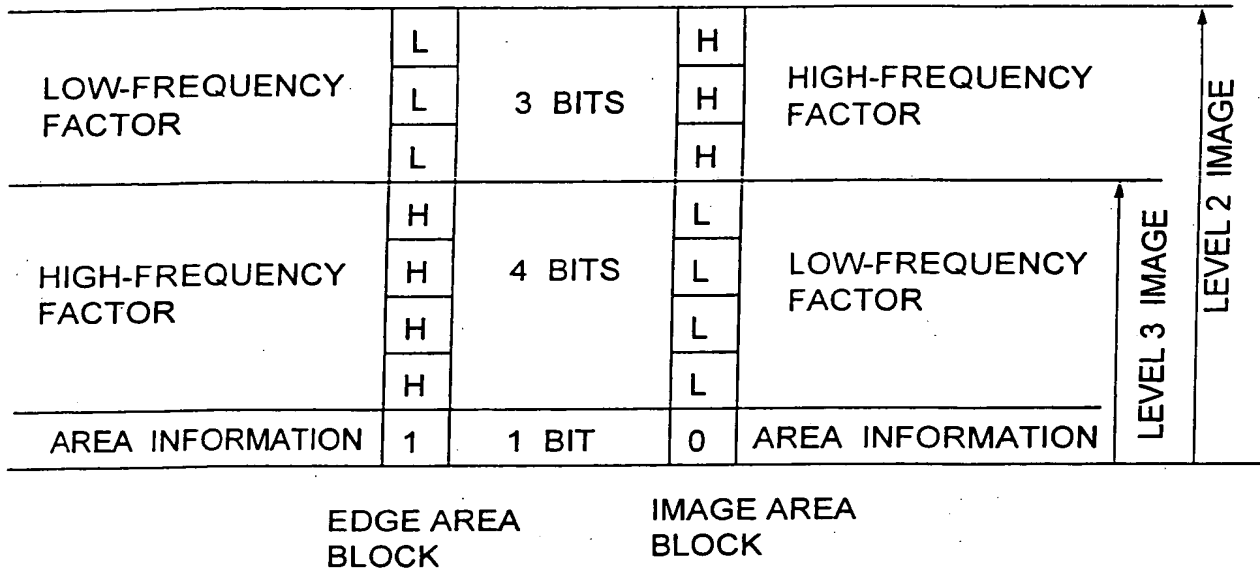


FIG.34

